

Interactive comment on “Carbon isotopic signature of coal-derived methane emissions to atmosphere: from coalification to alteration” by G. Zazzeri et al.

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Dear Nuñez Ramirez,

thank you very much for your comments, they are extremely constructive.

I will certainly add more information about the $\delta^{13}\text{CH}_4$ analysis. The paper Zazzeri et al. (2015), which I refer to for the sampling strategy, explains in more detail the whole sampling methodology, but I agree that more details for a better understanding of the method can be added.

More maps will be provided, as long as they are available.

C1

I think the Keeling Plot analysis is well suited in the special circumstances of our measurements. The Miller-Tans plot allows for a changing isotopic ratio of the background, it is useful when the background is not constant and there is more than one source. In our case, each sampling aimed at identifying the isotopic source signature of one source and the sample collected upwind of the source represented the background.

The calculation of a weighted mean coal $\delta^{13}\text{CH}_4$ signal could be the scope of a different paper that could include some modelling work rather than only field measurements, which this paper is based on. However, even if all the studies of coal are located and provide details of mining and coal type, a global mean might not be representative of global coal mining as a whole, which is why we are advocating the calculation of regional averages.

Kind Regards

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C2